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PARACELSUS IN THE LIGHT
OF FOUR HUNDRED YEARS

By Henry E. Sigerist, M.D.

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By Henry E. Sigerist, M.D.

WHEN PARACELSUS came to Salzburg, four centuries ago, he was only forty-eight years of age, but he was an old man, sick, tired, and worn. If you look at the picture that Augustin Hirschvogel made of him three years before his death, you will notice that this is the face of a man who had struggled all his life and had become embittered, of a man who had been fought and derided. He had tramped all over Europe, and now he was nearing his end.

Why did Paracelsus go to Salzburg in 1541? He had written a great many books on a great variety of subjects, medical, scientific, philosophical and theological, but he had succeeded in having only a very few printed. Of his major works only one, his *Surgery*, a book that discusses not operations but the treatment of wounds and other surgical diseases, had found a publisher and an audience. Now, in the summer of 1541, he had some hope that in Salzburg he would find patrons and would be able to have a few more of his books issued in print.

It was too late, however. When he came to the city he

was a sick man. On September 21, he felt that the end was near, called a notary and drew up his will. An inventory of all his earthly possessions fills hardly two pages. He had some clothes, a few coins, a few jewels, gifts of wealthy patients. He bequeathed them to a few friends. His manuscripts he left to a barber-surgeon. He had always felt closer to the surgeons than to the academic physicians. The rest of his possessions he left to the poor. He had been one of them all his life. Three days later, on September 24, he died.

Who was this man? It is extremely difficult to give an adequate picture of him, for many reasons. Many of his books have not been published yet. In the authoritative edition of Karl Sudhoff¹ 14 volumes are devoted to the books on medicine and the philosophy of nature. They were to be followed by ten more volumes of theological writings, and of those only one has been issued so far. Paracelsus' theological writings reflect a very important aspect of his personality, and without them it is difficult to understand his other books. Paracelsus' language adds to the difficulty of interpreting his work. The great majority of his books were not written in Latin but in German, and not in the language of Luther but in an Alemannic German which is close to the dialects that are still spoken in Switzerland today. In the sixteenth century the German language was not yet developed to express matters of natural science. A number of medical books had been translated, mostly in the fifteenth century, but

¹ Karl Sudhoff, *Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: I. Abteilung, Medizinische, naturwissenschaftliche und philosophische Schriften*. 14 Vols., Munich, 1922-33.

the majority of them were popular books for the layman or for the surgeon.² The translations of the Bible by Luther and Zwingli had enriched the language considerably, but there were no technical terms available to designate subjects of natural science. Such words had to be coined, and the interpretation of those we find in the works of Paracelsus is not at all easy.

Another difficulty is that Paracelsus, although a man of the Renaissance and a scientist, was deeply rooted in German mediaeval mysticism, and unless we know its literature we cannot attain a full understanding of Paracelsian thought.³

I would like to locate Paracelsus in space and time, and I think that this will help us to draw a more vivid picture of his personality. Let me take you to Switzerland. If from the city of Zurich—"hortus deliciarum, nobile Turegum"—you follow the left shore of the lake, you will come to a mountain, the Etzel. From the top of it you have a superb view of the snow and ice-covered peaks of the Alps, and to the east, right at your feet, you see a lovely rolling landscape with hills, woods, pastures, and orchards. In the sixteenth century, however, most of the region was covered with forests. Passing the Etzel, a pilgrims' road leads through to the Benedictine Abbey of Our Dear Lady of Einsiedeln. It had been founded in the ninth century, had developed into a cultural center, and was a

² Karl Sudhoff, *Deutsche medizinische Inkunabeln*. Leipzig, 1908. [Studien zur Geschichte der Medizin hrsg. von der Puschmann-Stiftung an der Universität Leipzig, Heft 2/3.]

³ See the excellent study of Bodo S. Freiherr von Waltershausen, *Paracelsus am Eingang der deutschen Bildungsgeschichte*. Leipzig, 1936.

famous place of pilgrimage where a Black Virgin was worshipped. A fire once had destroyed the monastery and church; through a miracle the statue of the Virgin was not burned but it turned black. Before you come to the Abbey you cross a wild gorge through which a mountain river, the Sihl, flows in cascades. A wooden bridge crosses it, and right at its entrance stands a house which is an inn to-day and was one in the fifteenth century. To this place a young physician came late in 1491 or early in 1492. His name was Wilhelm Bombast von Hohenheim. He was the impoverished scion of a noble family of Suabia. As he had to make a living, he studied medicine, probably in Tübingen, and came to Switzerland to practice. He married a girl from the region, a member of the Ochsner family. They both came from the same Alemannic stock, a sturdy race of hard-working people, fighters who made excellent soldiers. They were not "woven of silk" as Paracelsus once said, but "of coarse linen." They had the unrest and curiosity common to many mountain people. When you grow up with a mountain in front of you, the moment invariably comes when you want to know what is beyond it. Some day you climb it, and then you see other valleys and more mountains. And you go on and on until you reach other lands. This has driven many Swiss into foreign services and beyond the seas.

Dr. Bombastus von Hohenheim settled down near Einsiedeln and practiced on the pilgrims' road. Two hundred thousand pilgrims still worship the Black Virgin annually. They come by train today, but in the fifteenth century they followed the road that crosses the Sihl. They

all passed the doctor's house, and many of them, weary and sick from long traveling, must have called on him.

Towards the end of 1493, two years after he had started his practice, Dr. Wilhelm von Hohenheim had a son born to him. His Christian name was Philip. But the father was a humanist, a keen botanist, and so he gave the boy in addition the name of Theophrastus, in memory of the student of Aristotle. When the boy grew up, he was blond and used to be called "Goldilocks" which in Latin is Aureolus. And so it happened that Paracelsus would sometimes call himself with full names Philippus Theophrastus Aureolus Bombastus von Hohenheim. Later, after having studied in Italy, he followed the humanist fashion and adopted the Latin name Paracelsus. What it actually means we do not know.

This is the setting in which the young Paracelsus grew up, a landscape that seems lovely to us today, but was awe-inspiring wilderness then with its steep rocks, dark forests, and long winters when the whole region was buried in snow. He grew up close to nature, but as a subject of the Abbey also close to the church, fascinated and puzzled at times by its services and rites.

Paracelsus was born in 1493, the year when Columbus returned to Spain after having discovered a new world. It was a period of awakening all over Western Europe. The mediaeval world was a static world. Man was born into a status from which it was hard to escape. It was an authoritarian world, dominated by the Church. Salvation was the purpose of man's life, and all other considerations

were secondary. It was the best possible world created by God for all time to come, and all aspects of life were dominated by authorities. This world, however, that seemed so firmly established began to crumble and in the fifteenth century an attitude of revolt against authorities gradually developed. Trade increased and people became wealthy who did not belong to the privileged classes. Feudalism began to disintegrate, the manor system declined. More and more free people were employed, working for wages. Guild masters became merchants. All this created a great demand for gold as a medium of exchange, and this in turn started the great voyages of discovery. They were not undertaken to satisfy an intellectual curiosity, but for commercial purposes, because the world needed gold and spices and other raw materials that were not found at home. A new economic order began to develop, which called for free trade, free competition, free initiative, and appealed to the individual in man. Such a world could not develop under the rigid regulations of the Middle Ages. The traditional authorities were opposed. The most powerful authority, the Church, was "reformed." The authority of the guilds that regulated all aspects of industrial life was broken. The authority of the medical faculties which regulated the profession of medicine very much as the guilds controlled industry was equally opposed. Doubts were expressed concerning the words of Aristotle, Galen, Avicenna, whose authority had been unchallenged during the Middle Ages. The discovery of the world became a great experience. New con-

tinents, new races of mankind, new species of animals and plants, and new diseases were found of which there were no descriptions in the writings of the Greeks.

Paracelsus thus was born in a period of expansion, discovery, and rebellion. His early training was different from that of other physicians. His first teacher was his father, who not only taught him to read and write but made excursions with him to study plants and animals and minerals. He took him along to the sickbed of patients. Together they explored the nature that surrounded them. Paracelsus remained deeply attached to his father throughout his life. He knew that the father would understand him when the whole world was deriding him. In the *Grosse Wundarzney* he remembers his early teachers: "First Wilhelmus von Hohenheim my father who has never abandoned me; Bishop Erhart and his predecessors of Lavanttal, many abbots of Sponheim."

In 1502 the family left Einsiedeln and moved to Carinthia where the father became municipal physician of the mining town of Villach. There has been some speculation as to the reasons why Wilhelm von Hohenheim should have left Einsiedeln. I think the explanation is very simple. The pilgrims were poor, and so were the woodchoppers who lived in the region. They needed a doctor, to be sure, but could not provide a living for him. Paracelsus' father, like all physicians of the day, was eager to obtain a salaried position that would guarantee him a minimum income. And this he found in Villach where he remained until the end of his life. There was a Benedictine Abbey in that neighborhood too, the Abbey of

Lavanttal, where the young Paracelsus could get instruction. But there were also mines, a mining school and smelting works in which he used to spend much time acquiring experience in chemistry such as few people and certainly no physician had. He wanted to be a doctor like his father and never felt any hesitation about it, but in order to be a doctor he had to go through the regular curriculum of the schools. It seems likely that he studied the arts at the University of Vienna and medicine in Italy, at the University of Ferrara. His chief teachers were Manardus, and the great humanist Leoniceno who was a rebel also and had written a book, *Plinii ac plurium aliorum auctorum . . . errores notati*. We know little about this period of Paracelsus' life, but from later statements in his writings we can safely conclude that his university years were a bitter disappointment to him. He, who had studied science in the fields, in the woods and in mines, who had been in touch with patients from his early childhood on, found the universities still imbued with the spirit of scholasticism. The books, not nature, were in the foreground in all investigations. Anatomical studies were undertaken, but Vesalius had not yet appeared on the scene. Clinical instruction had not yet been inaugurated, not even in Padua. Most of the teaching was theoretical and consisted of the interpretation of texts. The ancient theories of disease were still accepted and treatment followed traditional lines.

Paracelsus at this time was already too much of a personality to let himself be forced into the traditional pattern. If the universities could not teach him what he

wanted to learn, other people would. Who? Barber-surgeons, old women, craftsmen, miners, abbots, scholars or laymen. What difference did it make? You must learn from any source that you can tap. He realized, however, that he would have to travel, and from Italy he set out on a journey which with short interruptions was to continue all his life and which only death brought to an end.

Paracelsus mentions in his works many places visited on his peregrinations, and this allows us to reconstruct his travels to a certain extent. After having been all over Italy, he went to France, Spain, and Portugal, to England, Scotland, and Ireland, to Denmark and Sweden, then east to Lithuania and Poland. He visited Hungary, Rumania, and Croatia, was on the Greek islands of Rhodes and Samos, and went as far as Constantinople, Crete, and Alexandria. He covered an enormous territory, considering the means of communication of the time. And while he traveled he practiced medicine, learned from every source, and taught a few young people who followed him at times. He never missed a visit to mines or mineral springs. Wherever he went, he inquired about the diseases peculiar to the region, talked to the local doctors, to the surgeons, to plain folk, but he could also hold his own in discussions with bishops and scholars. He learned a great deal during these years of wandering, saw a great variety of diseases, learned to observe them under varied conditions, became aware of the great influence of the environment on man. And he also learned to apply new treatments. He developed his own therapy.

In the sixteenth century diseases were treated primarily

with drugs. The pharmacological principles of Galen based on the theory of qualities were dominating. Physicians applied the Galenic materia medica that had been enriched considerably with Arabic drugs. Compound remedies very often had twenty or more ingredients. Paracelsus opposed this polypharmacy and pointed out that in such remedies one drug neutralizes the other. His recipes were simple, consisting of few drugs. He was always anxious to find what we call today the effective principle. His experience in the field of chemistry led him to apply metals and other mineral drugs. He made extensive use of compounds of sulphur, lead, antimony, mercury, iron, and copper. He used such potent drugs as opium very frequently. Many of his remedies did not fit into the Galenic theory, which to him was a proof that the theory was wrong and that the action of drugs must be explained on different principles. It is hard to tell whether experience drove him to apply gold, pearls, corals, and similar remedies, or whether this was the result of his astrological views.⁴

Paracelsus undoubtedly was a good doctor who got results where others failed. He was a better doctor than most of his contemporaries because he followed two great teachers, *experientia ac ratio*. Observation and correct reasoning are still the basic methods of medicine. Deeply rooted in the Middle Ages, Paracelsus was nevertheless a man of the Renaissance who revolted against the traditional authorities. Not *perscrutamini scripturas*, but *per-*

⁴ Henry E. Sigerist, "Laudanum in the Works of Paracelsus," *Bulletin of the History of Medicine*, IX (1941), 530-44.

scrutamini naturas rerum. In other words, medical research should not consist of the exploration of books and their interpretation according to Aristotelian logic, but should be scientific research.

Paracelsus wanted to be more than a good practitioner. He wanted to understand things. Why is there disease in the world? What causes disease? What is disease? Why does a man wither and die? Why does a man become insane? What is man? Paracelsus travels, treats patients, reflects on what he sees and writes about it. He did not write in Latin, which was a foreign language. Whoever thought in Latin thought in the traditional terms of scholasticism. Paracelsus thought in his mother tongue, Alemannic German, and wrote in the same language. And when he did not have a term available to express what he meant, he made new terms. Some of his writings were written for surgeons and had to be in the vernacular, but his theoretical writings in which he addressed himself to everybody were written in German also.

The most inspiring book that Paracelsus ever wrote is the *Volumen Paramirum*. He worked on it for many years, completed it around 1530, but it was not published before 1562. It is the ripest fruit of Paracelsian thought, a philosophy of medicine as challenging today as it was then. It is not easy to read, and a good English translation should be made of it. It is written in the terminology of the day, but if we take the trouble to interpret it, the book impresses us as very modern.⁵ The *Volumen Paramirum*

⁵ The finest interpretation of the *Volumen Paramirum* is that of J. D. Achelis, *Paracelsus Volumen Paramirum*. Jena, 1928.

discusses the five spheres that determine man's life in health and disease. Man is a microcosm. He is in small what the world is in large. The world is God and nature, and so is man. If we wish to understand man, we must study God and nature.

The first sphere is *ens astrale*. What does that mean? The stars move according to eternal laws, so does man's life. The constellation characterizes a given moment. Every individual has his moment, his historical time which affects his life in health and disease. This is a very fine thought. A child born in Spain today will be exposed to more and different diseases than a child born in 1900. A patient suffering from pernicious anemia or pneumonia has better chances of recovery today than he had twenty-five years ago. In other words, the historical moment at which we live has a great influence on our physical life, and Paracelsus expresses this symbolically by speaking of the stars.

Man is a part of nature. He lives in a given physical environment from which he derives the matter and energy required to sustain his life. But from nature come also poisons and all the abnormal stimuli that cause disease. Everything that comes from nature, therefore, is both good and evil, is to man food, poison, and remedy. It is the dosage that determines its effect. This is the second sphere, which Paracelsus called *ens veneni*.

Although contemporaries in the *ens astrale*, no two individuals are exactly the same. We know that no two individuals have the same fingerprint, or the same handwriting. Each man is born with a nature of his own, and

thus carries to a large extent his destiny within himself. This is the third sphere, *ens naturale*.

Like animals man has body and mind. They are one, and determine each other mutually. But then man is an animal of a special kind. He is conscious of himself and of his past. He not only feels pain, but is able to reflect about the phenomenon of pain and to establish abstract concepts. That which gives man his special position in the world is the spirit. Man is a spiritual being and from this fact, from the fourth sphere, *ens spirituale*, may also result causes of disease.

These are the four spheres that determine man's life. This is the fourfold order under which he lives. When he is well adjusted to it, he is in good health, but from these four spheres may come diseases, and man then returns to the normal condition in the fifth sphere, the sphere of God, *ens Dei*.

In other writings Paracelsus explained more specifically the material process of health and disease. The human body does not consist only of four elementary humors, blood, phlegm, black and yellow bile: nobody will deny their existence, but they do not play the part attributed to them by the Galenic school. What is important is that in every organ three principles can be found, the combustible, the volatile, and the incombustible, which remains as an ash. Paracelsus named these three principles sulphur, mercury, and salt. And to the force that makes an organism alive, the vital principle, he gave the name *archaeus*.

From the few remarks just made, it becomes apparent

that Paracelsus was a vitalist and spiritualist. A deeply religious man, he was basically a mystic. But he was a scientist as well, better versed in chemistry than most of his contemporaries, and in his system he endeavored to combine spiritualism with modern science. It was a time that was aiming at complete systems, that would explain all phenomena of life in health and disease. It had not yet learned the self-imposed limitations of modern science. It refused to admit that there were things in nature not yet known.

The doctrine of Paracelsus was new and very different from that of traditional medicine. It was in sharp opposition to the scholastic doctrine. More and more Paracelsus felt that he had a mission to carry to the world, that medicine must be "reformed" and that it was his task to be its Luther. He felt a strong desire to settle down, to have his books printed, and to teach—to teach regular students and not the vagabonds who had accompanied him at times on his wanderings, many of whom had come to a bad end. In 1524 he went to see his father in Villach and then established practice in Salzburg. He had hardly started when the Peasants' Wars broke out. Although he was not directly involved, his sympathies were all with the rebellious peasants. He was arrested, released, but there was no staying in Salzburg. He moved on to Strasbourg, a city famous for its printing houses and for its school of surgery, situated in the heart of Europe. He applied for citizenship there and was registered on the Burger's roll at the end of 1526.

Strasbourg was not far from Basle, in those days a cen-

ter of humanistic studies with a university and publishers of world reputation, attracting artists and scholars from far and wide. There was much traffic between the two cities, and the reputation of Paracelsus soon spread to Basle. Not one of his books had been printed so far, but rumor spread very rapidly in those days, and Paracelsus seems to have been known particularly for his successful treatments of surgical diseases and gout. It happened that the great printer Frobenius had been suffering for five years from the result of an accident. Gangrene had developed in his right foot, and the physician recommended an amputation. He decided to take a chance and to consult the new doctor. Paracelsus came, treated him, and saved his foot. At that time, the humanist Erasmus of Rotterdam was living in Frobenius' house. He was in poor health also, and he too was successfully treated by Paracelsus.

Upon the recommendation of these two influential men the Town Council offered Paracelsus the position of municipal physician that had just become vacant. This was the same kind of job that his father was holding in Villach. There was one difference, however; since Basle was a university city, the municipal doctor was at the same time professor in the medical faculty of the university.

Thus suddenly Paracelsus saw his most ambitious dreams fulfilled. His wanderings were coming to an end. He would be able to teach young students, to train them in the new "reformed" medicine that he had created. Being close to Frobenius, he would undoubtedly soon have an opportunity to see his books printed. He accepted

eagerly and went to Basle in 1527. On June 5 of that year he announced his courses. He had the announcement printed, and not only posted it for the information of students in the customary way but sent it out to a number of colleagues. Indeed, it was not the usual announcement of traditional courses, but the program of a new medicine. It was, moreover, the first Paracelsian words that ever went to print. I cannot resist the temptation to quote a few abstracts from this program, as it beautifully reveals the Paracelsian attitude: The art of medicine, he said, had decayed. "But we shall free it from its worst errors. Not by following that which those of old taught, but by our own observation of nature, confirmed by extensive practice and long experience. Who does not know that most doctors today make terrible mistakes, greatly to the harm of their patients? Who does not know that this is because they cling too anxiously to the teachings of Hippocrates, Galen, Avicenna, and others?" What the doctor needed was a profound knowledge of nature and its secrets. "Day after day I publicly elucidate for two hours, with great industry and to the great advantage of my hearers, books on practical and theoretical medicine, internal medicine, and surgery, books written by myself. I did not, like other medical writers, compile these books out of extracts from Hippocrates or Galen, but in ceaseless toil I created them anew, upon the foundation of experience, the supreme teacher of all things. If I want to prove anything, I shall not try to do it by quoting authorities, but by experiment and by reasoning thereon. If therefore, my dear readers, one of you should feel the im-

pulse to penetrate these divine mysteries, if within a brief space of time he should want to fathom the depths of medicine, let him come to me at Basle, and he will find much more than I can utter in a few words. To express myself more plainly, let me say, by way of example, that I do not believe in the ancient doctrine of the complexions and the humours, which have been falsely supposed to account for all diseases. It is because these doctrines prevail that so few physicians have a precise knowledge of illnesses, their causes, and their critical days. I forbid you, therefore, to pass a facile judgment upon Theophrastus until you have heard him for yourselves. Farewell, and come with a good will to study our attempt to reform medicine. Basle, June 5, 1527.”

This was indeed an unusual document and a regular challenge to the medical faculty. The professors were prejudiced against him anyway. They had not been consulted when he was called, and considered him an intruder. According to the custom of the time, he was invited to present his credentials, but he had no diplomas to show. He must have lost them during his wanderings. Paracelsus did not make it easy for the faculty to accept him. During his many years of traveling he had developed habits that were shocking to respectable professors. He did not wear an academic gown and a doctor's bonnet, but used to go around with the broad-rimmed hat of a coachman that Holbein has depicted in his portrait. He drank heavily, used coarse language, and did not behave at all like a professor.

In an atmosphere of hostility he began his lectures with

keenest enthusiasm. He lectured during the summer term of 1527, during the holidays, and during the winter term of 1527–1528. He stuck to his program and did not interpret the Greek and Arabic classics in the customary way. He lectured on pathology and therapy, on the preparation of remedies and their prescription, on diagnosis by means of the pulse and the urine, on cathartics and phlebotomy, wounds and surgical diseases. The medical lectures he gave in Latin; the surgical ones in German, although he was addressing medical students. This too was a shocking innovation.

The faculty had taken up the challenge and had forbidden Paracelsus the use of their lecture hall. But the Town Council, his patron, backed him and the use of the lecture hall was granted. The hostility of the faculty he could bear. This was to be expected. A reformer is prepared for struggle and does not expect sympathy and cooperation from the people whose doctrines he is reforming. His hope was in the students, in the young medical generation. They represented the medicine of the future; they would understand his message and would carry his teachings all over the world. But here Paracelsus met with the most bitter disappointment. The students did not understand him either. They sided with the faculty against him. They also wanted to be respectable physicians some day. One morning a lampoon ridiculing him was found on the doors of some of the churches and on the new student bourse. From the content it became obvious that it could have been written only by one of his own students. Paracelsus was deeply hurt; he asked the Town

Council to protect him and to punish the culprits. It was a sad sight—a reformer burning with zeal to carry his students along with him yet forced to ask the authorities to protect him against these very students.

Paracelsus felt deeply discouraged. Frobenius, who had always protected him, had died, and outside the Town Council he had no friends. A scandal soon brought the situation to a climax. Paracelsus had treated and cured a canon of the cathedral. He was a rich man and was charged a rather high fee. Paracelsus, who had never owned anything and whose patients were mostly paupers, followed the custom of the day and charged rich people fees. The canon refused to pay, brought the matter to court, and won his case. This was the end. The battle was lost. Paracelsus had no friend left in the city of Basle, no audience that would listen to him. Without taking leave from anybody, he left the city in February, 1528, and began his wanderings once more, a lonely and defeated man, but convinced more than ever of the significance of his mission.

He went where he had come from, into Alsace, to Colmar. In Basle he had worked feverishly in the preparation of his courses and had accumulated endless notes; some of them were worked out into books, but first of all he felt the need of justifying his teachings before himself and the world. He did it in the book *Paragranum*. I do not know what the title means. Paracelsus liked mysterious names beginning with para, such as Para-granum, Para-mirum, Para-celsus. The book deals with the four pillars of medicine. It is written in aggressive, passionate language. “I

treat of the principle from which I write, that principle without which no doctor can advance. Therein I have laid myself so bare that my heart shall at last be revealed for what it is.” “You must follow me and not I you . . . how do you like Cacophrastus? This dirt you must swallow at any rate.”

The first pillar of medicine is philosophy, by which Paracelsus does not mean the traditional scholastic philosophy of the Middle Ages, but the science of nature, what in the seventeenth century was still called the “new philosophy.” “Who could be a better preceptor than nature herself?” “As then the physician should grow out of nature, what is nature but philosophy, and what is philosophy but invisible nature?”

The second pillar is astronomy. Heaven is to the creature what a father is to his son. Heaven works in us, and we cannot understand mankind unless we recognize its cosmic subjection and its time. The third pillar is chemistry. Throughout his life Paracelsus was an ardent chemist, and never traveled without a set of chemical apparatus. He gave chemistry a new purpose, which was not to create gold or silver, or the elixir of life, but to prepare effective remedies and to reveal biological processes. “Nature is the arch-chemist and we must imitate her, otherwise we are no more than kitchen sluts.” In other words he had a clear conception of the fact that many biological processes are nothing but chemical reactions. The fourth pillar of medicine, finally, is virtue. The foundation of medicine is love. No man can be a good physician unless he has a highly ethical concept of his mission.

Since Paracelsus could not spread his gospel by word of mouth, he had to do it in writing, and in the following years he worked feverishly putting his experiences on paper. He wrote a large number of monographs, one on diseases of miners, the first monograph on the subject, another book on mental diseases, studies on gout, and other diseases of metabolism as we would call them. He wrote a large number of pharmacological books in which he described his remedies and how to prepare them. He wrote on the treatment of wounds and other surgical diseases, a subject in which he was particularly experienced. He wrote on mineral waters and the curative power of health resorts. But as a writer too, he was bitterly disappointed. Publishers refused to print his books. Nürnberg, one of the most enlightened and progressive cities at the time, was the only place where he succeeded in having some of his writings published. There, a short treatise of eight leaves on the treatment of syphilis with guaiac wood was published in 1529, and in 1530, the same publisher, Friderich Peypus, published his monograph on syphilis. The disease was widespread in those days, and literature was welcome. In 1535 Paracelsus published, somewhere in Switzerland, a short treatise on the baths of Pfäfers, waters that were famous in the treatment of syphilis. The Nürnberg publisher was willing to issue other works of Paracelsus, but the medical faculty of the University of Leipzig protested and discouraged him from proceeding with the plan. Only one of his major works, the *Grosse Wundarzney*, was published in his lifetime. It was a great success, and was printed several times, in Ulm in 1536,

and in Augsburg the same year. All his other great books, however, *Paragranum*, *Paramirum*, the books on tartaric diseases, and the pharmacological writings never found a publisher during his lifetime. They became known to the world much later, when some of his followers, primarily Adam von Bodenstein and Johannes Huser collected whatever manuscripts they could find and published them. Huser's edition of the collected works published in Basle from 1589–91, is still one of the most useful editions, with which we must work as long as the Sudhoff edition has no indices.

We know very little about the period from 1528 to 1541, the thirteen last years of Paracelsus' life. He was in St. Gall in 1531 where he met the great humanist Vadianus. It may be that once more he played with the idea of settling down, but nothing came out of it. St. Gall was upset by religious struggles and Paracelsus did not stay long in the city.

During those years Paracelsus went through a deep religious crisis. He was too much of a mystic to follow the Reformation, but too much of a nonconformist to accept the integral doctrine of the Catholic Church. For a number of years we have no records of his life. All we know is that he was in the mountain region of the eastern part of Switzerland, and that during those years he wrote most of his theological writings, examining and discussing in his own way the basic principles of the Catholic Church.

For a while it looked as if he had given up medicine entirely, but when an epidemic of plague broke out in the Inn valley the physician in him was challenged. He came

back to earth, took up the fight again, wrote a plague book for the city of Sterzing, and once more he took the pen to justify himself and his teachings before the world. He did it in seven splendid *Defensiones*, his most personal work that reveals his personality better than anything he had written before.⁶ He continued his itinerant life, practicing and writing until he returned to Salzburg. There he died and was buried in the church of St. Sebastian.

What is the significance of Paracelsus in the light of four hundred years? When we compare him to other great physicians and surgeons of the Renaissance, men like Vesalius, Fracastoro, Paré, we find that his contribution was of a totally different kind. Vesalius created a new descriptive human anatomy which became the foundation of a new system of medicine. The work of Vesalius has been assimilated by medicine and is dead now. The same applies to Fracastoro and Paré. Fracastoro wrote a classical monograph on contagious diseases. We know that most of his observations were correct. They have been accepted in course of time and much has been added to the subject since then. Paré became the father of surgery. We venerate him as such, but if we read his works we do it for purely historical reasons.

Paracelsus holds a totally different position in the history of medicine. Like the others, he too made a number of definite contributions to medicine and improved its equipment and techniques, particularly in the field of therapy. He will always be remembered for the introduc-

⁶ An English translation of the *Defensiones* by Mrs. C. Lilian Temkin is in press (1941).

tion of many chemical remedies. But he did infinitely more in that he attacked the basic problems of the healing art, asking for the *how* and *why*. He was a scientist in search of a philosophy of medicine. He used the experiences of medicine and science as materials in order to create a synthesis. He wanted to understand the world in which he was living and man's part in it in health and disease. His approach to the problems was that of a vitalist and spiritualist. Descartes was soon to show that there is another approach that leads to far-reaching conclusions.

Whether we agree with Paracelsus or not, we cannot read his books without being strongly stimulated or challenged. The problems he discussed are not solved yet, and this is why his books are still alive today. They make us realize how primitive and sketchy our present theory of medicine is. We have accumulated a large number of scientifically established facts. They are very useful and are largely responsible for the progress of medicine. But we need a philosophy to connect the facts. This is where Paracelsus—and Descartes—can still teach us a great deal.

